



Alternative: Reappropriate Water Above Otowi Gage Up to 1929 Conditions

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1. Summary of the Alternative

This white paper addresses the possibility of reappropriating water in the Rio Grande above the Otowi gage to ensure that New Mexico uses all allowable depletions as of 1929. The Rio Grande Compact uses an input-output model to determine the water delivery obligations of Colorado and New Mexico. These obligations are based on uses as of 1929 and as documented in the 1938 Rio Grande Joint Investigation (National Resources Committee, 1938). Since uses have shifted (decrease in amount of irrigated agriculture, increase in number of groundwater wells), it is possible that New Mexico's depletions above Otowi gage are less than they were in 1929, and water is available to appropriate under normal hydrologic conditions.

This alternative would involve submitting an application to the Office of the State Engineer (OSE). If the State Engineer determines that water is available for appropriation, then additional water rights may be available in the region. Such an appropriation would provide additional water rights for use, storage, transfer, or even to serve as offsets for additional groundwater pumping. However, it is possible that streams where the amount of use is less than the 1929 condition are those tributaries to the Rio Grande where the amount of wet water is often insufficient to meet existing water rights. The insufficient supply, possibly reduced by the watershed conditions, could in fact be the reason for the decrease in water use. Careful technical analysis can help determine whether this alternative is worth pursuing.

2. Technical Feasibility

In order to have an appropriation of this type approved by the OSE, a comparison of waters being depleted in 1929 with waters currently being depleted is required. In 1929, a greater





percentage of the region was in agricultural use than is presently. Conversely, more groundwater is currently being used by domestic and municipal wells than in 1929. If the net change between 1929 and the present reflects lower water use, more water would potentially be available for appropriation.

Waters being used in 1929 were documented in a Rio Grande Joint Investigation done in 1937 (Natural Resources Committee, 1938). The 1937 study did not desegregate depletions in the Jemez y Sangre area. The study presented depletions for the San Luis Valley (Colorado), the Middle Rio Grande Valley (Colorado border to Elephant Butte), and the area below Elephant Butte. The Middle Valley included some sub-areas (i.e., Isleta to Socorro), but did not include a separate area corresponding to the Jemez y Sangre region or the area above Otowi. Estimates for depletions in the entire Middle Valley are about 500,000 acre-feet per year. According to the 1937 study, streamflow depletions are defined as:

The amount of water which annually flows into a valley, or upon a particular land area (I), minus the amount which flows out of the valley or off from the particular land area (R) is designated "stream-flow depletion" (I-R). It is usually less than the consumptive use and is distinguished from consumptive use in the Rio Grande studies.

The Jemez y Sangre Water Planning Council developed water budgets for each subregion within the planning area. The subregions that are located above Otowi gage include Velarde, Santa Cruz, Santa Clara, Pojoaque-Nambe, Tesuque, and portions of the Los Alamos sub-basin. The water budgets included both a total inflow component and a total outflow component for surface water and groundwater. To be consistent with the 1937 study, total inflows minus total outflows (as reported by Jemez y Sangre [2001]) were calculated for both surface water and groundwater (groundwater was included because it is considered to be stream-connected). The total mean annual inflow minus the total mean annual outflow for the sub-basins above Otowi gage (excluding Los Alamos) was approximately 36,000 acre-feet.

The outcome of the application is uncertain. In order for an appropriation of this type to be approved by the OSE, a comprehensive study comparing current depletions to depletions in the areas surveyed in the 1937 study would be required, and only after conducting the technical studies would the region understand whether depletions have decreased, thus potentially





making water available for appropriation. If no water is available, then the proponents of this alternative would have expended considerable funds without securing additional water rights.

3. Financial Feasibility

The costs associated with this alternative are primarily related to submission of the water rights application, which would include minimal filing costs, as well as the legal and technical fees to complete the application process. Certain local governmental entities may apply for community development block grants to support water rights acquisitions.

As noted in Section 2, technical studies would need to be conducted to determine whether depletions have decreased, thus potentially making water available for appropriation. Even if depletions have decreased, the OSE would need to make a determination regarding impairment before approving the appropriation and could require the applicant to conduct further technical studies to establish no impairment. Combined legal and technical studies to obtain OSE approval could possibly be completed for \$100,000 to \$200,000. However, as it is likely that extensive modeling will be required and/or contested legal issues will be present, this alternative could cost \$1 million or more, and as also noted in Section 2, the outcome of the application would be uncertain.

4. Legal Feasibility

As discussed in Section 1, total depletions in New Mexico may have decreased since 1929, and therefore, northern Rio Grande water users above the Otowi Gage may not be receiving the full surface water supply allowed under the Compact. If such water is available, it could be re-appropriated for use in northern New Mexico. On June 26, 2001, Santa Fe County filed a notice to appropriate all unappropriated water above the Otowi gage, on behalf of northern New Mexico users, including the Jemez y Sangre water planning region. The application to appropriate must be filed by June 26, 2004. The County is planning an organizational meeting for early Spring 2002 to identify participating water users and to establish a process to prepare and submit the application. The applications will be subject to an earlier application filed on May





22, 2001 by the City of Albuquerque requesting an appropriation of nearly 200,000 acre-feet of flood flows in Abiquiu Reservoir.

Because appropriation up to the 1929 condition has Rio Grande Compact implications, the OSE would most likely submit the application to the Compact Commission for review.

5. Effectiveness in Either Increasing the Available Supply or Reducing the Projected Demand

If implemented, this alternative could potentially increase the number of upper basin marketable water rights in the region. These water rights could be used to meet future demand by providing direct diversion rights or as offsets for groundwater pumping. The actual number of additional water rights will be determined by the OSE based on technical studies documenting changes in depletions.

6. Environmental Implications

The environmental impact of this alternative will depend on how the additional water rights would be used. If additional diversions are envisioned, then streamflows would be altered, possibly affecting aquatic and riparian habitats. Excess water appropriated and removed from the natural stream course could result in lower than normal flows farther downstream that might impact riparian habitat and endangered species. These effects would be local depending on diversion and return flow points. If the surface water rights were used to offset groundwater pumping, then no direct diversions would occur, thus avoiding direct streamflow impacts. If the water were kept in storage, it could be used to augment streamflows in low-flow conditions.

Planners should carefully consider the environmental implications of the conveyance and distribution of reappropriated water.





7. Socioeconomic Impacts

Appropriating up to the 1929 condition is generally positive because the entire region benefits from using the water in the Jemez y Sangre region rather than allowing it to flow to Texas. Since the historical depletions occurred above the gage and the water right would thus presumably have a point of diversion above the gage, this alternative benefits primarily users above the Otowi gage. Water right owners in this part of the region have traditionally been concerned about all aspects of water management in the area, and this alternative may raise issues with those users. The following discussion of historical and cultural issues explains the context for these concerns.

The Jemez y Sangre region, particularly the northern part, is distinguished by its rural and agricultural character, predominantly Indian and Hispano population, localized land-based economies, and pockets of persistent poverty. Its Indian and Hispano populations represent some of the most unique cultures in the world, products of a long history of continuous human habitation, adaptation, and cultural blending. Land-based Indian and Hispano cultures still thrive, carrying on centuries-old cultural traditions that include distinctive land-use and settlement patterns, agricultural and irrigation practices, natural resource stewardship practices, social relations, religious activities, and architecture. Particularly pertinent to water management is the ancient acequia tradition, which is vital both as a sustainable irrigation system for subsistence and market agriculture and as part of the social glue that holds together rural communities.

The survival of these deeply rooted local traditions is essential for the continuity of rural culture and communities and, in turn, for the local tourism industry, which is built in large part upon the singular cultural and historical personality of the region. Preservation of these traditions is therefore an important consideration in determining the socioeconomic and cultural impacts of regional water planning.

Appropriating any water above Otowi Gage, particularly if that water is transferred to below Otowi Gage, will be viewed by acequia irrigators as a dangerous precedent and will be vigorously opposed. Recognizing the significance of this issue, the 2001 New Mexico





Legislature sought to prohibit water right transfers from above to below Otowi Gage in House Joint Memorials 14 and 6.

Despite the perceived negative socioeconomic and cultural impact of this alternative on rural water users, the prior appropriation doctrine is designed to protect senior users such as acequias. In response to an application to appropriate water, the OSE would first have to make a determination that water is available in the region. If water were available, the applicant would have the burden of proving non-impairment. If circumstances exist where senior users would not be impaired and the application could be approved, the OSE would condition the permit such that senior users were protected. If impairment is inevitable, then the application would be denied.

Legalities aside, certain users have significant concerns regarding the fairness of adjudications and the socioeconomic and cultural impacts of appropriating water rights that rural communities have traditionally used and come to rely on for years. These users have also expressed concern that they may not benefit from the water rights that may be appropriated through the County application due to lack of funds. The OSE will allocate water to the entities listed in the application. Presumably only applicants participating in the legal and technical fees will be included in the application. Water users (particularly acequias) located above Otowi gage may not have the funds to participate and therefore may be excluded from the application even though they are currently listed in the notice to appropriate.

In addition to these concerns, legal questions of ownership of stormflows and the potential impacts to unadjudicated Indian water rights are key threshold issues that must be dealt with first and foremost, similar to the appropriating above-average runoff alternative (DBS&A, 2002). In short, the process of identifying “excess” water for appropriation would be an onerous administrative task, would possibly conflict with ongoing adjudication suits, and would undermine rural water rights by adding further to the undue legal and financial burden already placed on lower-income rural water users. Given all these issues, any move to appropriate water from the upper Rio Grande is certain to involve a lengthy legal conflict.





8. Actions Needed to Implement/Ease of Implementation

In order to appropriate excess water above Otowi gage, the following actions would be needed:

- Submit an application (County of Santa Fe has submitted an application to pursue this alternative).
- Meet with the Interstate Stream Commission (ISC) to discuss its position on this appropriation and determine whether ISC would participate in or fund technical studies.
- Set up a process to allocate water among water suppliers in the region and determine who would contribute to the costs to pursue the alternative and benefit from the possible appropriation. Discuss the participation of water users who may not be able to contribute funds, but would benefit from availability of additional water rights.
- Conduct technical studies to determine whether depletions have been reduced.
- Address negative perceptions that may surround this alternative (include public education and participation, and propose solutions that might alleviate the threats perceived by the acequias).
- Determine the status of the City of Albuquerque application and whether it would affect this appropriation.

9. Summary of Advantages and Disadvantages

This alternative could potentially make more water available for use and transfer, thus helping to meet future demand. Having additional water rights available provides flexibility to water managers. Since this appropriation would be shared among users in the region, it may provide a means to mitigate potential conflicts. Conversely, disadvantages include uncertainty and potential conflicts that may create obstacles to its implementation. Expensive technical studies would be required to quantify the amount of water available.





References

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